RANCHO SANTA ANA BOTANIC GARDEN
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JUGLANS CALIFORNICA
SOUTHERN CALIFORNIA BLACK WALNUT

RANCHO SANTA ANA BOTANIC GARDEN
of the
NATIVE PLANTS OF CALIFORNIA
Santa Ana Cañon, Orange County, California
Established 1927 in Memory of
JOHN W. BIXBY

Number 43 May 9, 1941

JUGLANS CALIFORNICA
SOUTHERN CALIFORNIA BLACK WALNUT

Juglandaceae Walnut Family

Deciduous tree to about 40 ft. in height, forming a rounded crown, usually broader than high; trunk rarely over 24 in. in diam., usually soon divided into numerous branches or even shrublike in habit with several branches arising direct from a broadened basal platform, bark dark gray, roughened. Leaves without stipules, alternate, 6-12 in. long, pinnately odd-compound; leaflets 9-17, ovate-lanceolate, coarsely serrate except at base, nearly sessile, dark green and glabrous above, lighter and almost glabrous beneath. Flowers appear in March and April, monoecious (staminate and pistillate separate on same tree), wind pollinated. Staminate flower arising from buds of the last season's wood, green or yellowish, borne in drooping catkins 2-4 in. long, calyx of 3-6 lobes, stamens numerous (15-25 per flower). Pistillate flowers in separate clusters of 2-5, borne on new shoots of the season; calyx 4-parted, the lobes acute, recurved at tips; petals 4, minute (apparently absent in some material); ovary inferior, 1-celled, about $\frac{1}{8}$ in. long, bearing 2 feathery, reddish or yellowish styles, each about $\frac{1}{4}$ in. long. Fruit a nut, incompletely partitioned, at first green with a juicy husk, and a hard, nearly smooth shell; at maturity the husk becomes dark brown or blackish and does not separate from the shell, which is nearly spherical, with indistinct, longitudinal striations, about 1 in. in diam. In germination the cotyledons remain within the shell which splits partially along the mid-line allowing the hypocotyl and epicotyl to elongate. Early leaves are pinnate, but bear few leaflets.

The genus *Juglans* (from Latin for Jove, and nut) consists of about a dozen species widely distributed in temperate climates. The most valuable species is *J. regia* (the Persian or English Walnut). In California there are two very closely related species.

Juglans californica was described in 1875 by Sereno Watson, botanist at Harvard University, based upon specimens from southern California. Its distribution is restricted to cismontane southern California, ranging from the north end of the Santa Ana Mts., to the San Bernardino and San Gabriel Mts., and thence northward through the coastal hills to Ventura Co. and southern Santa Barbara Co. It is abundant on sedimentary and clay soils, especially on north slopes and canyon bottoms.

The Southern California Black Walnut is so designated in order to distinguish it from the Northern California Black Walnut (*J. Hindsii*). The latter is a larger tree, has bigger leaflets, larger nuts with more conspicuous ridges, and is restricted to a few ancient Indian campsites.

Years ago the principal rootstock for budded English Walnuts in southern California was *Juglans californica,* but nowadays few walnut orchards are being planted in southern California. In northern California *J. Hindsii* and other black walnuts are being used for this purpose.

The burls or large basal platforms occasionally produced on *Juglans californica* are highly prized by furniture manufacturers for veneer, and

those of good quality bring almost fabulous prices.

Nuts of *Juglans californica* have an excellent flavor, but are almost too small to be worth the effort of cracking. However, they are not wasted, for various wild animals gather them for winter use.

Propagation of *Juglans californica* is the same as for other walnuts. The ideal procedure is to plant several nuts in a well prepared hole where the tree is wanted. If several seedlings grow, the least vigorous can be removed at the end of the first season. A splendid root system is thus developed, resulting in an excellent top growth. The disadvantage of this method is that it requires considerable care the first year. Nuts planted in nursery rows in the fall or winter can be easily irrigated and ordinarily make unbranched seedlings 3-4 ft. high the first season. These are easily handled bare root in January or February. If these same seedlings are allowed to grow two seasons in the nursery rows they will attain heights of 10-12 ft., but develop such large roots that they are difficult and expensive to handle.

Our plantings of *Juglans californica* in the Garden are from 7-12 yrs. old and have been placed in varied exposures and soils. Those which have received copious amounts of water and which are in deep, rich soils have made the most rapid growth. Our largest planted trees are over 20 ft. high, but volunteer seedlings which have sprung up in favored spots have almost equalled this growth in 3 or 4 yrs. Under our conditions the trees will remain alive without irrigation after once established, but for maximum growth need about the same amount of water as the English Walnut.

The Southern California Black Walnut is an attractive feature of our landscape and should not needlessly be destroyed. It is probably the most drouth-resistant of the various kinds of walnuts now planted in southern California, and for this reason can be used very effectively for naturalistic plantings in this region.

The hybrid produced when *Juglans californica* is crossed with *J. regia* is known as the "Paradox". It is an extremely vigorous tree, somewhat resembling the English Walnut in growth habit, bark and leaves. Its nuts are produced only sparingly, look like English Walnuts, but have exceptionally hard shells. This hybrid frequently appears when seedlings of *J. californica* are grown, since chance crossing is common due to the close proximity of English Walnuts to most wild trees. We have several of these trees, the largest being over 25 ft. high and about 9 yrs. old. This hybrid could be used advantageously wherever an extremely large, spreading, deciduous tree is desired.

A peculiar horticultural variety is *Juglans californica quercina* with oak-like leaves. It originated in Garden Grove, California, in 1901. An extensive account of this variety was published by Prof. E. B. Babcock (Univ. Calif. Publ. Agric. Sci. 2: 1-46. 1913). Two of these trees are still alive in a parkway on Durant St., Santa Ana, California. About a dozen seedlings from these two trees were presented to the Garden by Mr. Dale Griggs, Superintendent of Parks, Santa Ana. Several are like typical *J. californica,* while others bear the peculiar oak-like leaves of the parents.

CARL B. WOLF.

RANCHO SANTA ANA BOTANIC GARDEN

Dedication of Garden Foundation to the Board of Trustees for the Rancho Santa Ana Botanic Garden of the Native Plants of California:

"THE NATURE, OBJECT AND PURPOSE OF THE INSTITUTION HEREBY FOUNDED AND TO BE MAINTAINED HEREUNDER.

ITS NATURE: A botanic garden of the native plants of California, herbarium and botanical library, containing living and/or preserved specimens of trees, plants and flowers native to California, and literature relating thereto.

ITS OBJECT: The preservation and improvement of the property now transferred and such property as may hereafter be transferred to the Trustees for those who not only wish to enjoy, but to study, assembled in one accessible locality, native California plants; and for the advancement of science and education with reference to plant life indigenous to the State of California.

ITS PURPOSES: (a) An institution founded primarily for scientific research in the field of local botany.

(b) To preserve the native California flora, try to replenish the depleted supply of some of the rarest plants which are rapidly being exterminated, and bring together in a comparatively small area as complete a collection of the rich store of native California plants as can be grown in this southern section of the state, thereby promoting the general welfare of the people of the state by providing the means for encouraging and carrying on the above mentioned activities in said state and by doing such other things as may be necessary and desirable to carry out the objects hereof."

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